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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/588,228	08/03/2006	Yutaka Shibata	4633-0178PUS1	5415
2292 7590 01/14/2009 BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747				
EXAMINER WALBERG, TERESA J				
ART UNIT 3744		PAPER NUMBER		
NOTIFICATION DATE 01/14/2009		DELIVERY MODE ELECTRONIC		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary

Application No.

10/588,228

Applicant(s)

SHIBATA ET AL.

Examiner

Teresa J. Walberg

Art Unit

3744

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 December 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 August 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-8508)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____
- Paper No(s)/Mail Date _____

DETAILED ACTION

1. Prosecution on the merits of this application is reopened in view of the newly discovered references to McLain (3,902,552) and Huet (3,154,141). Rejections based on the newly cited reference(s) follow.

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 2, 5-7, and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hughes et al (2004/0154787) in view of McLain (3,902,552) and Huet (3,154,141).

Hughes discloses a hot water supply heat exchanger (Fig. 1) including a water pipe (14) forming a water passage and a refrigerant pipe (32) forming a refrigerant passage, the hot water supply heat exchanger being for heating water flowing through the water passage by a refrigerant flowing through the refrigerant passage (see abstract), an inlet part of the water passage having water of a predetermined temperature or less is provided with a heat transfer enhancer (52 in Fig. 4) or a heat transfer enhancement pipe section (52 in Fig. 4), the enhancer being spiral grooves formed in the inner surface of the water pipe (52

in Fig. 4), the refrigerant pipe being connected to the periphery of the water pipe (Fig. 1).

Hughes does not disclose the passage being an ellipse.

It is conventional in the art to make fluid flow tubes in many different shapes including ellipses. It would have been obvious to one of ordinary skill in the art to use an ellipse shaped to rather than a round tube in the heat exchanger of Hughes et al, as an obvious substitution of one known pipe shape for another.

Hughes does not disclose the passage having a heat transfer enhancer provided on only an inlet part of the fluid passage.

McLain discloses heat transfer tubing having heat transfer enhancement such as texturing in some areas and not others. See Figs. 1-3.

Huet discloses heat transfer tubing having an increased amount of heat transfer enhancement texturing on an inlet part of the fluid passage.

It would have been obvious to one of ordinary skill in the art in view of McLain and Huet to provide a heat transfer enhancer on only an inlet part of the fluid passage, the motivation being to increase heat transfer only in the desired location.

4. Claims 1-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Daikin (JP 2003-97898) in view of Hitachi (JP 9-72683) and further in view of McLain (3,902,552) and Huet (3,154,141).

Daikin discloses a hot water supply heat exchanger (Fig. 1) including a water pipe (9) forming a water passage and a refrigerant pipe (10) forming a

refrigerant passage, the hot water supply heat exchanger being capable of heating water flowing through the water passage by a refrigerant flowing through the refrigerant passage, a plurality of heat exchanger units stacked one above another and connected to form continuous passages (Fig. 1), the refrigerant pipe being connected to the periphery of the water pipe (Fig. 1).

Daikin does not disclose an inlet part of the water passage being provided with a heat transfer enhancer, the heat transfer enhancer being spiral grooves. Hitachi discloses providing spiral grooves as a heat transfer enhancer in the inner surface of a heat exchange pipe. It would have been obvious in view of Hitachi to provide spiral grooves in the inner surface of the pipe of Daikin as a heat transfer enhancer, the motivation being to increase the rate of heat transfer.

Daikin in view of Hitachi do not disclose the passage being an ellipse. It is conventional in the art to make fluid flow tubes in many different shapes including ellipses. It would have been obvious to one of ordinary skill in the art to use an ellipse shaped to rather than a round tube in the heat exchanger of Daikin in view of Hitachi, as an obvious substitution of one known pipe shape for another.

Daikin in view of Hitachi do not disclose the passage having a heat transfer enhancer provided on only an inlet part of the fluid passage.

McLain discloses heat transfer tubing having heat transfer enhancement such as texturing in some areas and not others. See Figs. 1-3.

Huet discloses heat transfer tubing having an increased amount of heat transfer enhancement texturing on an inlet part of the fluid passage.

It would have been obvious to one of ordinary skill in the art in view of McLain and Huet to provide a heat transfer enhancer on only an inlet part of the fluid passage, the motivation being to increase heat transfer only in the desired location.

5. Applicant's arguments filed 30 December 2008 with respect to claims 1-9 have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Teresa J. Walberg whose telephone number is 571-272-4790. The examiner can normally be reached on M-F 8:00 - 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cheryl Tyler can be reached on 571-272-4834. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Teresa J. Walberg/
Primary Examiner, Art Unit 3744

/TW/